RSR CORPORATION

January 26, 1994

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Mr. Andres Cano
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RE: Phase II Groundwater Monitoring Plan and Response to Comments Document-- Quemetco, Inc., An RSR Corporation Subsidiary. CV.86-6644 RSWL(JRX) and HWCA 85/86-005.

Dear Gentlemen:

Enclosed please find two (2) copies of the above-referenced documents. If you have any questions or comments, do not hesitate to contact Gerald A. Dumas or me at (214) 631-6070.

Sincerely,

Stephen K. Reynolds
Regulatory Specialist
Environmental Services
RSR Corporation

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ATTACHMENT A

QUEMETCO, INC.
CITY OF INDUSTRY, CALIFORNIA
RESPONSE TO EPA AND DTSC COMMENTS

The following discusses each comment provided in the United States Environmental Protection Agency (EPA) and Department of Toxics Substances Control (DTSC) February 3, 1994, attachment. Reference to resulting modifications to the October 20, 1994 Phase 2 Groundwater Monitoring Plan (GMP) and the January 10, 1994 modifications, are provided after each comment.

Portions of the Phase 2 GMP have been changed to correct minor typographical and grammatical errors. These changes do not affect the content of the plan and are not listed in the plan modifications below.

EPA Comment 1

General Comment: The plan does not summarize soil sampling and groundwater monitoring conducted to date. According to the July 21, 1993 letter from EPA to John Mueller and Lynn Bergeson, this document should include a summary of such data. The Phase 2 GMP must be revised to include a verbal discussion of the results and conclusions of all previous soil and groundwater characterization conducted by RSR and tabular or graphical compilation of all such data. This data must include all groundwater monitoring data since 1982 and soil sampling data collected during the recent installation of MW-12 through MW-15. Areas of soil contamination must be evaluated for the potential to cause groundwater contamination.

Plan Modification

The data tables and a response to EPA Comment 1 are currently under preparation and a response will be forwarded to EPA and DTSC upon completion.

EPA Comment 2

General Comment: The Plan does not contain a schedule for completion of the Phase 2 GMP activities. According to the above-referenced letter, the plan is to contain such a schedule. The main features of this schedule shall be the one year detection monitoring period mentioned in Section 3.3 and submittal of the Final Remedial Investigation Report (FRIR) and the Corrective Measures Plan (CMP). The four quarterly sampling events comprising this one year detection monitoring period shall include with the November

1993, February 1994, May 1994, and August 1994 sampling events. Quemetco will use this data to make a determination, in accordance with the Phase 2 GMP, as to whether the surface impoundment has impacted groundwater quality. This determination shall be submitted along with or as part of the quarterly report for the August 1994 quarterly sampling event. The FRIR and CMP shall be due within 120 days after submittal of the quarterly report for the August 1994 sampling event.

Plan Modification

The plan has been modified to add a section presenting a schedule of activities in Section 9.0.

EPA Comment 3

Section 2, General Comment: The plan currently makes no mention of the new monitoring wells MW-14 and MW-15. While they are not part of the RCRA groundwater monitoring system for the surface impoundment and therefore not integral to the Phase 2 GMP, the plan should at least mention them to avoid confusion. This section should state that MW-14 and MW-15 were installed at approximately the same time as MW-12 and MW-13. Section 2 should also present any data or conclusions from the installation or sampling of MW-14, MW-15, or any other wells at Quemetco which contribute to the overall understanding of site hydrogeology pertinent to the surface impoundment. A detailed description of the installation of MW-14 and MW-15 is not needed, but the plan should refer the reader to the September 28, 1993 Quarterly Report for such a description.

Plan Modification

Section 2.0 has been modified by addressing MW-14 and MW-15, and presenting the data collected from the August and November 1993 sampling events. A reference to the September 28, 1993 Quarterly Report, for well installation details has been added.

EPA Comment 4

Section 2, Figure 3: The newly installed wells MW-14 and MW-15 are not shown on this figure. This figure must be revised to show the locations of these new wells.

Plan Modification

Figure 3 has been modified to include the locations of wells MW-14 and MW-15.

EPA Comment 5

Section 3.0, Page 10: The first paragraph on this page states that a list of water quality protection standards have been developed for the site in accordance with applicable regulations and other requirements. However, this list does not appear in the plan. This section must be modified to include this list in a clear, Tabular format. Table 2 is probably the most appropriate place to tabulate these standards.

Discussion

Water quality protection standards were developed from the Primary Maximum Contaminant Levels (MCLs) established as drinking water standards by the California Department of Health.

Plan Modification

Section 3.0 has been modified to omit the word "standard" and replace it with the word "guidelines". Section 3.1 has been modified to include MCLs as the water quality protection standard. Table 2 has been modified to include MCLs.

EPA Comment 6

January 10 Revisions, Discussion 6: Groundwater samples must continue to be field filtered and preserved for the remainder of the one year detection monitoring period. The option of lab filtering may not be considered until after the August 1994 quarterly sampling event is completed.

Discussion

Quemetco will field filter for the remainder of one year until the August 1994 sampling event is completed. Quemetco understands that the option to laboratory filter may not be considered until after the August 1994 sampling event.

Plan Modification

Section 4.3, fourth paragraph has been modified to include the option to laboratory filter after the August 1994 quarterly sampling event has been completed.

DTSC Water Level Elevation Comment 1

The Plan fails to acknowledge that the water levels will be measured in all wells in the shortest possible time.

Plan Modification

Section 4.1, first paragraph, has been changed to state that before any groundwater is removed from monitoring wells for sampling purposes, a water level survey of all wells will be performed. The survey will be completed in an uninterrupted manner in the shortest feasible amount of time. The water levels and total depths of the wells will be recorded on a water level survey form. The water level survey form is included in Appendix E.

DTSC Water Level Elevation Comment 2

It must be specified in the Plan that water levels will be measured during times of expected seasonal maximum and minimum water levels. The seasonal maximum and minimum water levels expected must be specified by month. The consultant must provide documentation (hydrographs) to support those specifications. [22 CCR Section 66265.97 (e)(15)]

Discussion

Currently, water level data are collected on a quarterly basis as required by 22 CCR Section 66265.97 (e)(15), and these data are presented in the quarterly groundwater monitoring reports. To address this comment, Quemetco will use historical water elevation data to generate two hydrographs: one for monitoring well MW-9 (located upgradient of the surface impoundment area) and one for monitoring well MW-11 (located downgradient of the surface impoundment area). These hydrographs will be used to evaluate the periods of expected seasonal minimum and maximum water levels on a quarterly basis and will be included in future quarterly groundwater monitoring reports.

Plan Modification

Section 4.1 has been modified to reflect this comment.

DTSC Water Level Elevation Comment 3

The Plan fails to describe calibration procedures, frequency, and record-keeping for water level probes. [22 CCR Section 66265 (4)(A)]

Discussion

The water level indicator used at the Quemetco facility will be calibrated against an engineers'-scale steel tape before the quarterly groundwater level survey is performed. The results of the

calibration and any correction factors will be recorded in a dedicated calibration logbook that will accompany the water level indicator into the field.

Plan Modification

Section 4.1, paragraph 2, has been changed to state that measurements of depth to groundwater will be taken with an electronic measurement device that has been calibrated against an engineers'-scale steel tape. The calibration information and any correction factors will be recorded in a dedicated logbook that will accompany the water level indicator into the field.

DTSC Water Level Elevation Comment 4

The order in which wells will be visited for water level monitoring, sampling, and maintenance was not described in the Plan. It must contain the rationale for the selected order in the terms of minimizing the possibility of cross-contaminating the wells and/or samples. [22 CCR Section 66265.97 (e)(4)]

Discussion

It is Quemetco's standard operating procedure to sample monitoring wells in order of ascending concentration; however, analytical data show that concentration levels of the constituents of concern (arsenic, cadmium, and lead) are relatively consistent across the site at levels below or slightly above the method detection limit. Quemetco will measure groundwater levels and sample wells MW-14 and MW-15 after all of the other monitoring wells, due to their location in the raw materials storage area, where ambient contaminant levels may potentially be higher than other site locations. This practice will aid in reducing the possibility of cross-contamination.

Plan Modification

Sections 4.1 and 4.3 have been modified to reflect this comment.

DTSC Maintenance / Decommission Comment 1

The Plan fails to describe procedures for performing necessary maintenance in a timely manner. [22 CCR Section 66265.97 (b)(7)] It should describe well redevelopment and routine maintenance especially with respect to sedimentation. What measured difference between the total depth (TD) of any well with the as-built TD will trigger redevelopment/maintenance?

Discussion

Quemetco will monitor each well for siltation during the quarterly water level surveys and perform maintenance on an as-needed basis. Wells will be redeveloped if silt deposition obstructs 5% of

the screened interval of the well, or if groundwater production in the well has significantly been impaired due to siltation. These determinations will be based on total depth of well measurements taken during the quarterly water level survey and field observations.

Plan Modification

Sections 2.2 and 4.1 have been modified to reflect this comment.

DTSC Maintenance / Decommission Comment 2

The consultant should include a section on well decommissioning and replacement so that when approved those procedures can be implemented without a permit modification.

Plan Modification

Section 2.3, has been modified to include a paragraph stating that all wells to be decommissioned will be overdrilled and grouted in accordance with state of California Department of Water Resources water well standards Bulletin 74-81 and all subsequent supplements and in compliance with the L.A. County Health Services Department requirements.

DTSC Maintenance / Decommission Comment 3

In the course of the CMP, Department staff will review the proposal to decommission the shallow wells on-site.

Plan Modification

No modifications to the plan are proposed.

DTSC Purging Comment 1

The Plan must include turbidity in the field parameters monitored and recorded during purging. [22 CCR Section 66265.97 (e)(13)]

Discussion

During future sampling events, turbidity will be measured and recorded on the field sampling logs.

Plan Modification

Section 4.2 has been modified to include turbidity measurements. This paragraph has also been modified to indicate that stabilization measurements and all pertinent well purging information will be recorded on the field sampling form rather than the field logbook.

DTSC Purging Comment 2

Purging should occur at a rate equivalent to recharge. The wells should not be purged to dryness.

Discussion

Ideally, monitoring wells will produce groundwater at a sufficient rate to allow for a purge rate that will not result in the wells being purged to dryness. This is especially important when water is collected for volatile organic compound (VOC) analyses, the results of which may be affected by the mixing of the water with air through the process of cascading. At the Quemetco site, however, there are no VOC analyses performed and the cascading of groundwater will not affect the analytical results of the required analytical suite performed on groundwater samples at the site. Nonetheless, if poor recharging conditions are encountered, a reasonable attempt will be made not to purge the well to dryness. If recharge of the well requires an extended period of time, the well will be evacuated and sample collection will not take place until sufficient groundwater is present. If this period of time exceeds 24 hours, the well will be considered dry and no sample will be collected. If it is determined that the poor recharge is due to siltation of the well, arrangements will be made to redevelop the well before the next quarterly sampling event.

Plan Modification

Section 4.2 has been modified to reflect this comment.

DTSC Sampling Comment 1

The Plan must state that clean, powderless, surgical gloves (or another approved type of glove) shall be worn by sampling personnel and shall be changed often.

Discussion

The gloves most commonly used by ESC field personnel are made from a 100% nitrile polymer material and are lightly powdered on the inside with non-talc vegetable starch to facilitate donning. The gloves are manufactured in compliance with the Food and Drug Administration's 21CFR, 170-199, which means that all of the ingredients are generally recognized as safe in or on food. The chemical makeup of the powder and the negligible presence of the powder on the exterior of the gloves do not present a threat of sample contamination. New gloves are donned for each well sampled and are changed often.

Plan Modification

Section 4.0 of the Plan now includes the following statement:

> To protect field personnel, prevent cross-contamination, and assure sample integrity, appropriate protection measures will be employed. These measures include the donning of personal protection equipment as required in the site health and safety plan and the use of appropriate gloves during well measurement, purging, and sampling activities. A new pair of gloves will be used for each well purged and sampled.

DTSC Sampling Comment 2

The labeling of the sample containers is not described. A sample copy of the label should be included. [22 CCR Section 66265.97 (e)(4)(B)]

Discussion

Sample labels include the following information: sample designation, date and time of sample collection, place of collection, preservation (if any), and the analysis to be performed. Sample labels may vary in appearance, but must include this basic information.

Plan Modification

An example of a sample label illustrating the minimum required information is provided in the report as Appendix F. Text indicating the minimum required information for sample labels is included in Section 7.1.

DTSC Sampling Comment 3

The Plan should specify that filters used for filtration of the metals samples will be prewashed with distilled water and that a volume of ground water equal to two times the capacity of the filtering device will be passed through the filter and discarded before samples are collected.

Discussion

According to Geotech Environmental Equipment, Inc., (800) 833-7958, the manufacturer and distributer of the filters used for filtering groundwater at the Quemetco facility, the filters are ready-to-use when purchased and do not require a prewashing process. The filters used are Geotech 0.45µm dispos-a-filters (part numbers GD045700 and GD045050) and Gelman AquaPrep 0.45µm Flex Filters (part number 4535). The filters are single-use devices and are disposed of after each sample filtration.

Plan Modification

No changes to the plan are proposed.

DTSC Sampling Comment 4

Procedures for field filtering are described in Appendix D of the Plan, but the rationale for deciding which samples for metals will be filtered is not presented. This rationale must include a consideration of the purpose of sampling -- detection monitoring. It must describe the procedures for determining the amount of preservative necessary to achieve the required chemical stability (e.g. amount of acid necessary to ensure pH<2 for metals analysis). It must describe the procedures for checking and documenting the results of preservation (e.g. checking whether metals samples have been acidified to a pH of less than 2 and that temperatures are maintained at 4 degrees Celsius during shipping and storage). The Plan must state that bottles which have been prepared with preservatives will not be overfilled. [22 CCR Section 66265.97 (e)(4)(B)]

Discussion

Table 3 summarizes the preservation requirements and analytical suite for the Quemetco site. Presently, the proper type and amount of preservatives are added to the sample containers at the laboratory. This is a common and desirable practice that serves to reduce the opportunity for contamination of the sample by additional sample container handling and field acidification. Additionally, having the laboratory provide the sample containers with the preservative pre-added is consistent with the November 1993 quarterly sampling event (the start of the one-year detection monitoring period). To check and document that the samples to be analyzed for dissolved metals are at a pH <2, the laboratory will spot-check incoming preserved samples and document the pH value. To ensure that the samples are not diluted in the field, field personnel will not overfill the sample containers. To verify that the samples are stored and transported at a temperature of 4 degrees Celsius, thermometers and/or temperature blanks will be placed in the coolers and the laboratory will read and record the temperature upon receipt of the samples.

Plan Modification

Appendix D (provided with the January 10, 1994, revisions) has been deleted and Section 4.4, Sample Containers, Preservation, and Handling, has been modified to include the rationale and procedure for field filtering. This section now mentions that thermometers and/or temperature blanks will be placed in the sample transport coolers and that the lab will read and record the temperature on receipt of the samples. The laboratory documented pH values and cooler

temperature will be reported in the analytical case narrative. Section 4.3, Sample Collection, has been modified to state that samples will not be filled to overflow to avoid diluting the pH value of the sample water and that samples requiring filtration will be filtered in the field until the August 1994 sampling event is completed. Once the August 1994 sampling event has been completed, an option to filter the samples in the laboratory may be exercised.

DTSC Sampling Comment 5

Inconsistencies - Quarterly sampling of wells #9, #11, and #12 was observed on November 17-18. Staff observed that not all Phase 1 ground water sampling plan procedures were being followed. The Phase 1 Plan calls for field filtering and/or field acidification of selected samples. No field filtering or acidification was being performed. Since lead is the principal contaminant of concern at this facility, procedures for sampling of this metal must be strictly observed. Staff did not observe sampling personnel in possession of the Phase 1 Sampling and Analysis Plan. Sampling personnel should carry and be familiar with the Sampling and Analysis Plan.

Discussion

The groundwater samples for dissolved metals from wells #9, #11, and #12 were collected on November 18, 1993, and were field filtered and were decanted into the appropriate sample containers that were pre-acidified with nitric acid at the laboratory. All other samples for dissolved metals were also field filtered and collected in pre-acidified containers except those collected from wells #4 and #7, which were not field filtered due to an equipment malfunction. The sample water from these wells was collected in non-preserved containers and was filtered and preserved upon receipt at the laboratory.

Plan Modification

Sections 4.3 and 4.4 of the Plan have been modified to state that filtering of dissolved metals samples will continue to be performed in the field until August 1994, after which time, the option to filter and preserve the samples at the laboratory may be exercised. If the samples are to be filtered and preserved at the laboratory, they will be delivered to the laboratory on the day of collection and will be filtered and preserved immediately upon receipt. Section 4.0 has been modified to include a paragraph stating that field personnel performing sampling activities at the site will be familiar with the Phase 2 GMP and a copy of the Plan will be available onsite for reference.

DTSC Data Presentation Comment 1

Every constituent of concern will be shown on a separate graph with the data from as may wells as can be legibly displayed. This must be acknowledged in the Plan. For values below the detection limit (DL) or limit of quantitation (LOQ), the value of the DL or LOQ must be specified.

Discussion

Concentrations of the constituents of concern will be presented in graphical form for all wells in the detection monitoring program (MW-9 through MW-13). Separate graphs will be generated for each constituent of concern (lead, arsenic, and cadmium). For values below the detection limit (DL) or limit of quantitation (LOQ), the values for DLs or LOQs will be specified. The graphs will be presented in the next Quarterly Report to be submitted in March 1994.

Plan Modification

Section 3.5 has been added to address this comment.

DTSC Data Presentation Comment 2

In order to facilitate comparison between upgradient and downgradient data, in the case that more than one graph is needed for each constituent of concern, each graph shall show data from the background monitoring points.

Discussion

Each graph will include data from both background wells (MW-9 and MW-10) and compliance wells (MW-11 through MW-13).

Plan Modification

Section 3.5 has been added to address this comment.

DTSC Data Presentation Comment 3

Raw monitoring data (copies of field logs and activity sheets that support interpretations in reports, depth to water data, well-head data, field monitoring parameter results, purge volume data, and on scene observations) must be provided together with the transcribed copies. The Plan fails to acknowledge this requirement. [22 CCR 66265.97(c)(2)]

Discussion

All raw monitoring data will be provided with the transcribed copy in the quarterly monitoring reports.

Plan Modification

Section 3.5 has been added to address this comment.

DTSC Quality Assurance/Quality Control Comment 1

The Plan fails to describe the presentation of laboratory summary sheets including result of matrix spike, matrix spike duplicate, and calibration runs (including dates and times).

Discussion

The plan has been modified to include the presentation of laboratory QA/QC including a review of holding times, initial calibration, continuing calibration, blanks, interference check samples, MS/MSD, duplicates, blank spikes, and dilutions. Additionally, trip blanks have been omitted from the Phase 2 GMP because they are not effective when analyzing for inorganics.

Plan Modification

Section 6.0 has been modified to reflect this comment and section 6.5 has been added to include data review.

DTSC Quality Assurance/Quality Control Comment 2

Analytic detection limits are listed in Table 2, the practical limits of quantitation should also be listed.

Discussion

Table 2 will reflect this comment.

Plan Modification

Table 2 has been modified to include limits of quantitation.

DTSC Statistics Comment 1

Specific statistical procedures should be described. Simple reference to non-parametric ANOVA is not sufficient, the specific methodologies, including critical assumptions, need to be described.

Discussion

The specific statistical methods used to analyze the groundwater data will be selected based on the proportion of "non-detects" and the distribution of the constituent concentrations. For comparison of background to compliance point concentrations, standard ANOVA, non-parametric ANOVA, or test of proportion methods will be used. For comparison of compliance point concentrations to water quality standards, confidence intervals will be used. Detailed descriptions of each of these methods are provided in Appendix G.

Plan Modification

Section 8.0 has been modified to reflect this comment. Appendix G has been added to the plan.

DTSC Statistics Comment 2

The use of "... published data for surface and groundwater..." to determine probable distributions for non-qualifying constituents may be to broad. Provide a specific approach with regard to San Gabriel Basin data. The Plan should also provide a review of site specific monitoring data and determine whether or not it is significant for evaluation of sample population normality.

Discussion

Only site-specific groundwater analytical data will be used to evaluate the distribution of the data and the role of non-qualifying ("non-detected") constituents. Regional groundwater data will not be used for this purpose.

Plan Modification

Section 8.0 has been modified to reflect this comment.

DTSC Statistics Comment 3

The methodology for constructing confidence intervals needs to be explained in the Plan. The consultant must discuss what criteria would be used to evaluate or confirm a release.

Discussion

Confidence intervals will be calculated based on a 0.01 Type I error level (99% confidence level). For each contaminant of concern, the water quality standard (MCL or AL) is considered exceeded if the lower limit of the confidence interval is greater than the water quality standard.

Plan Modification

Section 8.0 has been modified to reflect this comment.

DTSC Statistics Comment 4

Water quality protection standards for both surface and groundwater need to be specified in the Plan.

Discussion

As discussed in section 2.2 of the Plan, surface water monitoring for San Jose Creek will not be part of the monitoring program because quarterly monitoring of San Jose Creek by Canonie Environmental revealed no constituents of concern at concentrations above MCLs. Water quality protection standards for groundwater are specified in Table 2 of the Plan.

Plan Modification

Table 2 has been modified to reflect this comment.

DTSC Statistics Comment 5

The time frame for performance of statistical analyses must be specified. This must be in a reasonable time after sampling to determine if there is statistically significant evidence of a release.

Discussion

Statistical analyses will be performed after four quarterly sampling rounds have been completed for wells MW-9 through MW-13. Since wells MW-12 and MW-13 were first sampled in August 1993, the statistical analyses will be performed after the August 1994 sampling round. The results of the statistical analyses will be reported to the EPA and the DTSC within 30 days of receipt of the final August 1994 analytical results.

Plan Modification

Section 8.0 has been modified to reflect this comment.

DTSC Hydrogeology Comment First Paragraph

An explanation for why surface water monitoring -- especially with the presence of subdrains and weep holes -- is not proposed for San Jose Creek.

Discussion

As discussed in a previous comment, surface water monitoring for the San Jose Creek will not be part of the monitoring program because quarterly monitoring of San Jose Creek by Canonie Environmental revealed no constituents of concern at concentration above MCLs.

Plan Modification

No plan modifications are proposed.

DTSC Hydrogeology Comment Second Paragraph

The postulated hydraulic isolation of the "perched zone" is not supported in the Plan. Furthermore, a "... deeper surficial aquifer ..." seems to be a contradiction in terminology. The concept of a "... restricted perched zone which has historical exhibited unsaturated conditions." needs to be explained.

Discussion

The terminology for the water-bearing zones at the site has been changed. The perched zone refers to the shallow, horizontally restricted zone screened by wells MW-1 through MW-5, MW-7, and MW-8. The main saturated zone (beneath the perched zone) is referred to as the alluvial aquifer, and is screened by wells MW-9 through MW-13. The perched zone is isolated from the alluvial aquifer by an intervening clay unit approximately 10 feet thick. Water level measurements in the two zones show a minimum 20 foot head difference, and a pumping test conducted on the alluvial aquifer showed no influence on groundwater elevations in the perched zone. For these reasons, the perched zone is considered to be hydraulically isolated from the alluvial aquifer.

Plan Modification

Section 2.2 has been modified to reflect this comment.

DTSC Hydrogeology Comment Third Paragraph

The issue of unsaturated zone monitoring or the rationale for a lack of such monitoring is not adequately discussed.

Discussion

Unsaturated zone monitoring will not be part of the monitoring program because metals (lead, arsenic, and chromium) are the constituents of concern at the site. Metals are generally not volatile under normal temperature conditions and will not migrate in the vapor phase. Hence, unsaturated zone (vapor) monitoring is not warranted for the Quemetco site.

Plan Modification

Section 2.2 has been modified to reflect this comment.

ADDITIONAL MODIFICATIONS TO THE PHASE 2 GMP

pH and specific conductivity have been removed from Table 2.

pH and specific conductivity have been removed from Table 3.

Section 6.1, Field Blanks have been added and replace the deleted trip blanks

Section 7.3, Sample Analysis Request Sheets have been removed from the Phase 2 GMP.